AMENDMENTS TO THE CLAIMS

1.   (currently amended): [[A]] An article of manufacture comprising a computer-readable medium having embodied thereon a set of program instructions configured to enable a computing device to perform a method for reconstructing metabolism of a mammalian organism in a non-disease state and a disease state, said method comprising:

(a)   collecting data regarding the mammalian organism's metabolism for said non-disease and disease states;

(b)   linking the data into metabolic pathways using a relational database;

(c)   linking said metabolic pathways to functional information, disease manifestations and/or high-throughput screening information;

(d)   identifying interconnections between the metabolic pathways; and

(e)   creating and displaying interactive maps of the mammalian organism's metabolism in said non-disease and disease states by integrating exclusively on the basis of information obtained in steps (a), (b), (c) and through (d).

2.   (canceled)

3.   (currently amended): [[A]] An article of manufacture comprising a computer-readable medium having embodied thereon a set of program instructions configured to enable a computing device to perform a method for identifying a drug target, said method comprising:

(a)   collecting data regarding a mammalian organism's metabolism for a non-disease state and a disease state;

(b)   linking the data into metabolic pathways using a relational database;

(c)   linking said metabolic pathways to functional information, disease manifestations and/or high-throughput screening information;

(d)   identifying interconnections between the metabolic pathways;

(e)   creating and displaying interactive maps of the mammalian organism's metabolism in said non-disease and disease states by integrating exclusively on the basis of information obtained in steps (a), (b), (c) and through (d); and

(f)   identifying a drug target by comparing differences between said non-disease and disease states using the metabolic maps.

4.   (canceled)

5.   (currently amended): The ~~method~~ article of claim 1 ~~or 3~~, wherein said mammalian organism is a human.

6.   (currently amended): The ~~method~~ article of claim 1 ~~or 3~~, wherein said data regarding the mammalian organism's metabolism comprises expressed sequence tag data.

7.   (currently amended): The ~~method~~ article of claim 1 ~~or 3~~, wherein said data regarding the mammalian organism's metabolism comprises biochemical units comprising metabolic steps, chemical compounds, reactions and/or enzymatic functions.

8.   (currently amended): The ~~method~~ article of claim 7, wherein said enzymatic functions comprise genes and proteins.

9.   (currently amended): The ~~method~~ article of claim 7, wherein each of said biochemical units is linked to an annotation table, said annotation table comprising at least one field.

10   (currently amended): The ~~method~~ article of claim 9, wherein said at least one field is selected from the group consisting of organ localization, tissue localization, intracellular localization, intracellular compartmentalization, subcellular localization in another organism, a relationship to a disease, and a reference to an information source.

11-12. (canceled)

13.   (new): The article of claim 3, wherein said mammalian organism is a human.

14.   (new): The article of claim 3, wherein said data regarding the mammalian organism's metabolism comprises expressed sequence tag data.

15.   (new): The article of claim 3, wherein said data regarding the mammalian organism's metabolism comprises biochemical units comprising metabolic steps, chemical compounds, reactions and/or enzymatic functions.

16.   (new): The article of claim 15, wherein said enzymatic functions comprise genes and proteins.

17.   (new): The article of claim 15, wherein each of said biochemical units is linked to an annotation table, said annotation table comprising at least one field.

18.   (new): The article of claim 17, wherein said at least one field is selected from the group consisting of organ localization, tissue localization, intracellular localization, intracellular compartmentalization, subcellular localization in another organism, a relationship to a disease, and a reference to an information source.

19.   (new): An article of manufacture comprising a computer-readable medium having embodied thereon a set of program instructions configured to enable a computing device to perform a method for predicting the existence of a novel enzyme in a mammalian organism, said method comprising:
     (a)   collecting data regarding the mammalian organism's metabolism in non-disease and disease states;
     (b)   linking the data into metabolic pathways using a relational database;
     (c)   linking said metabolic pathways to functional information, disease manifestations and/or high-throughput screening information;
     (d)   identifying interconnections between the metabolic pathways;
     (e)   creating and displaying interactive maps of the mammalian organism's metabolism in said non-disease and disease states exclusively on the basis of information obtained in steps (a) through (d); and
     (f)   predicting the existence of a novel enzyme by detecting a gap between two non-essential metabolites that cannot be filled by any known enzyme in said mammalian organism.

20.   (new): The article of claim 19, wherein said mammalian organism is a human.

21.   (new): The article of claim 19, wherein said data regarding the mammalian organism's metabolism comprises expressed sequence tag data.

22.   (new): The article of claim 19, wherein said data regarding the mammalian organism's metabolism comprises biochemical units comprising metabolic steps, chemical compounds, reactions and/or enzymatic functions.

23.   (new): The article of claim 22, wherein said enzymatic functions comprise genes and proteins.

24.   (new): The article of claim 22, wherein each of said biochemical units is linked to an annotation table, said annotation table comprising at least one field.

25.   (new): The article of claim 24, wherein said at least one field is selected from the group consisting of organ localization, tissue localization, intracellular localization, intracellular compartmentalization, subcellular localization in another organism, a relationship to a disease, and a reference to an information source.